

# ROBO INDEX DELIVERS STRONGEST EPS GROWTH SINCE INCEPTION

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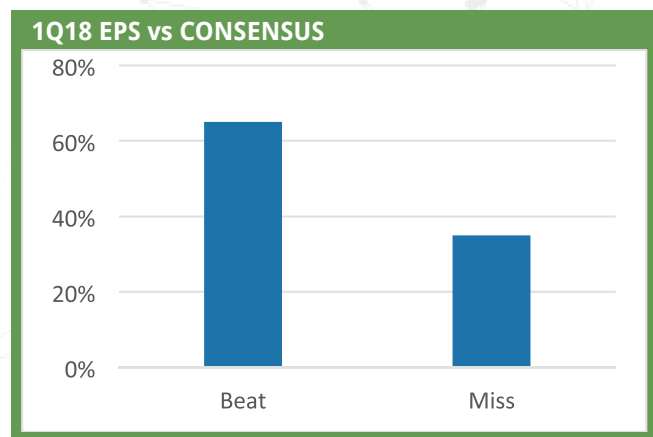
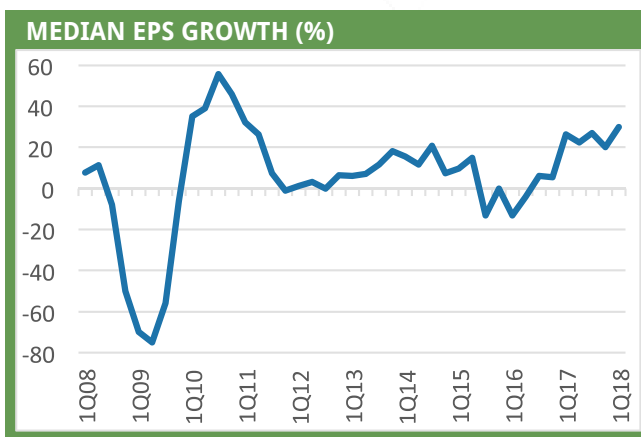
## SUMMARY

The ROBO Global Robotics & Automation Index looks set to deliver close to 30% median EPS growth in 1Q18, the strongest earnings growth since its inception in 2013. A majority of the technology and application leaders across Robotics, Automation, and AI (RAAI) continued to grow revenue in the double-digits.

Inside, we discuss key trends that emerged from the results of the 87 members of the index, including upgraded outlooks and rising R&D investments, industrial automation strength, as well as AI-driven transformation in healthcare and a surge in M&A activity.

### The index delivered the strongest EPS growth (+29%) since inception.

The ROBO index started 2018 with a bang as Robotics, Automation, and AI companies reported the strongest earnings growth since the inception of the index. With more than 95% of index members having reported 1Q18 results, median EPS growth accelerated to 29% in 1Q18<sup>1</sup>, up from 21% in the prior quarter, when many companies reported accounting losses related to the US Tax Cuts and Jobs Act. Adjusting for this temporary effect, the ROBO index has remained on a clear 20%+ earnings growth trajectory for the past five quarters.



<sup>1</sup>This report discusses median sales and EPS for the 87 index members as of March 31, 2018. The ROBO Global Robotics & Automation Index is a two-tiered equal-weight index.

## Index members hit double-digit sales growth for the 3rd consecutive quarter.

Earnings growth for the ROBO Global Robotics & Automation Index was led by the top line, with median sales growth exceeding 11% YoY, and 69% of index members beating consensus estimates. This marks a third consecutive quarter of double-digit sales growth despite higher hurdles. While this was somewhat slower than the 14% achieved in the prior quarter, we note that the hurdle was significantly higher at 7% in 1Q17 vs. 3% in 4Q16. Earnings estimates for the index have stabilized in the past three months following a major upgrade cycle of five consecutive quarters from 1Q16 through 1Q18. Consensus estimates currently point to 15% EPS growth for 2018 and 17% for 2019.

This impressive level of growth is increasingly broad-based, as reflected in the underlying performance of the 12 index subsectors. From Actuation (+21%), Food & Agriculture (+19%), and Factory/Industrial Automation (+10%), to Sensing (+13%), Healthcare (+12%), and Consumer (+29%), the vast majority of the 87 ROBO index members started 2018 on a strong note, with just eight companies experiencing revenue declines YoY. The strongest outperformers in the quarter were Harmonic Drive (+80%), Nvidia (+66%), Helix (+57%), Hiwin (+52%), and Maxar (+43%).

As a result, the ROBO Global Robotics & Automation Index is trading on a 12-month forward PE of 23x, compared to 27x a year ago. This represents a 5% premium to the 22x average since inception of the index in 2013.

ROBO Global Robotics & Automation Index - ntm PE



## NOTABLE TRENDS

### Demand for industrial robotics and factory automation remains very strong.

This was reflected in 30% sales growth at Fanuc—the Japan-based global leader in industrial robotics—and double-digit growth at its key competitors ABB Robotics and Yaskawa2. While macro data points including PMIs and industrial production suggest that the global synchronized recovery in manufacturing activity may be losing steam, companies focused on industrial automation appear to remain firmly bullish. Rockwell Automation, Fanuc’s US-based industrial automation partner, raised its full-year outlook, implying continued acceleration in 2H and that management believes we are in the early stages of a manufacturing expansion cycle. Siemens, the world’s largest factory automation supplier by revenue, also raised its outlook after reporting better than expected results in its digital factory business, which grew 20% YoY, including 41% in China. In China, local champion Hollysys Automation saw orders for industrial automation surge 56% after growing just 10% in the first half. IPG Photonics’ high-power laser sales grew 37% YoY, including 29% in China, as the company’s fiber lasers continue to displace traditional tools in automated material processing applications, especially cutting, welding, and marking of metals.

<sup>2</sup> Source for all index member results: Factset Research Systems. Price as of 5/30/2018 close.

### Supply chain capacity constraints are being addressed aggressively.

The capacity constraints for certain critical components that plagued the global robotics supply chain last year are being addressed by aggressive capacity expansion plans at many industry-leading companies, including Harmonic Drive, THK, Hiwin, and Airtac. However, supply/demand remains very tight in several areas of the factory automation supply chain—a fact that continues to provide several index members with favorable tailwinds in terms of prices and margins, including Keyence, which saw sales grow 19% in the quarter.

### Next-generation surgical procedures and DNA sequencing hit record growth.

Rising demand for next-generation surgical procedures and DNA sequencing set record growth for many of our index members. Intuitive Surgical, the global leader in surgical robotics behind the DaVinci system, delivered EPS 18% ahead of expectations, with 185 systems sold and 15% growth in procedures. With an installed base of more than 4,000 systems, we continue to believe that Intuitive Surgical is well positioned to capitalize on the rapid adoption of surgical robotics in the coming years. According to a new market research report by BIS Research, the global surgical robotics market is expected to reach an estimated \$13B by 2025.

Mazor Robotics, a pioneer in the field of robotic spine surgery, also posted record growth, with top-line sales hitting 32% YoY. This record first-quarter revenue reflects high levels of clinical adoption, with Mazor surpassing 33,000 cases performed and continued global demand for their solutions. Novanta, an innovative photonics and vision company, experienced broad-based momentum in life science, minimally invasive surgery, and advanced industrial. The resulting +35% YoY revenue growth was Novanta's sixth consecutive quarter of HSD or DD organic growth. We attribute this continued success to the strength of Novanta's team, its robust business model, and its key growth applications that are delivering innovations in DNA sequencing, robotic surgery, and advanced laser material processing. Meanwhile, strong results from Qiagen, a molecular diagnostic company, highlight the company's diversified growth strategy. Qiagen's promising new product, GeneReader, is focused on next-generation sequencing that is in high-demand for clinical research and diagnostic panels.

### Warehouse management solutions and logistics automation remained strong.

Warehouse management solutions and logistics automation continued to impress, with Zebra Technologies vastly surpassing street estimates and Manhattan Associates demonstrating improved order trends. Zebra posted terrific 1Q results and raised its outlook for the remainder of the year. The company's EBITDA and gross margin were also better than expected, reflecting Zebra's outstanding operational discipline and lean cost structure. Warehouse management software company Manhattan Associates showed growth in its cloud subscription revenue. It is clear that the company is building very positive momentum across multiple areas of its business and creating industry-leading transformative supply chain innovation. Looking forward, the company is seeing large upgrade opportunities and a strong pipeline as it continues to focus on R&D investments, which should continue to accelerate throughout 2018.

### Food and agriculture posted solid results.

Solid order intake and accelerating investments in agriculture equipment helped the Food & Agriculture subsector of the index post solid results and provided confidence regarding further investments in robotics and automation technologies. Krones AG, a producer of machinery and systems for the beverage industry, is seeing continued growth trends in the key industries they serve. As the company continues to invest in digitalization and expand its global footprint, we do anticipate compressed margins for the near term. US-based manufacturer of agricultural equipment, Deere, experienced higher than expected raw material costs that will likely be a headwind for the rest of the year in their agriculture segment. However, with its experienced management team, we expect Deere to navigate these challenges better than most. Meanwhile, John Bean Technologies, a solutions provider for the food, beverage, and air transportation industries, experienced company-specific operational problems. This was true despite the favorable backdrop of the food processing sector, one of the fastest growing in the industrial space. John Bean's organic sales were down 3% off a tough comp (+17%). The reasons for the shortfall: operating results were negatively impacted by inefficiencies in the FoodTech division. Management believes the issue to be short-term operational and new product launch inefficiencies and that order rates will accelerate in 2H:18.

### **Security and surveillance is off to a strong start.**

Switchblade, which we view as the primary driver of growth in this sector for the next few years, is off to a strong start with the recent announcement of a large contract win worth over \$111M, including a first order for the US Marine Corps. AeroVironment, the leading supplier of small Unmanned Aerial Systems (UAS) to the US government, has been diversifying into commercial applications with drones with a focus on agriculture and telecommunications. We anticipate this expansion to generate new growth opportunities moving forward.

### **3D printing is developing at a rapid pace.**

Innovation and increased investments in the next-generation 3D printing industry have been a tailwind for 3D Systems, who demonstrated solid execution in 1Q18 supported by increasing demand for printers in the healthcare sector. Meanwhile, Stratasys experienced mixed results due to a longer sales cycle in high-end systems. However, we are encouraged by the fact that the company has already begun addressing this issue with their channel program. We also see their emphasis on accelerating long-term development programs to expand their addressable market as a positive. New programs include a new metal additive manufacturing platform, advanced composite materials, and further developments in FDM and PolyJet technologies. We believe metal 3D printing has already proven its vast potential for time and cost savings. Looking forward, software and integration tools will be needed to increase the importance of 3D printing across the manufacturing sector.

### **Artificial intelligence is driving digital transformation.**

While AI is impacting many subsectors of the ROBO index, this digital transformation is particularly evident in the Computing, Processing & AI subsector where innovative solutions for machine vision, data center, and cloud platform providers are in high demand. Nvidia turned in another record quarter with revenues surging 66% YoY, while Microchip continued its outstanding execution with strong profitability metrics. However, Cognex and Faro whose customers are in the consumer electronics industry both experienced short-term weakness resulting from the mobile phone market digesting some of the inventory in

the marketplace. While the expectation has been reset, the TAM and underlying growth opportunities in the consumer electronics industry are expected to remain stronger than ever over the next several years.

### **Digital transformations are driving software revenue growth.**

On the software front, Dassault Systems and Cadence Design both reported very strong software revenue growth that was broad-based and indicative of the major digital transformations that are happening within enterprises powered by AI, mobility, IoT, and edge computing. Dassault's new platform, 3DEXPERIENCE Marketplace, positions the company as a catalyst and an enabler of this digital transformation. The innovative Marketplace connects buyers and sellers of design and manufacturing content and services worldwide, and serves a long list of industries including transportation, mobility, and aerospace & defense. Meanwhile, Cadence Design's prototyping, simulation, and verification offerings all experienced strong order growths as semiconductor and system companies actively seek ways to accelerate product development and time to market.

### **M&A continued at record pace.**

Since January, we have seen 42 M&A deals announced involving 21 of our ROBO index members who were each very active in deploying capital on strategic acquisitions. We expect this trend to continue for the remainder of the year across all regions. Many of our index members are acquiring high-growth adjacent businesses to add to their portfolios—additions that will help cut costs via automation and economies of scale. Trimble made two software acquisitions valued at \$1.7B in engineering and construction, creating the most complete portfolio of SaaS-based project management software. Meanwhile, Schneider Electric, the global leader in digital transformation of energy management and automation, announced its intention to acquire Larsen & Toubro's electrical and automation business for \$2.1B to enter the India market. Another index member, Teradyne, acquired Mobile Industrial Robots (MiR) for \$272M to expand its collaborative autonomous robot portfolio of products. Globally, M&A deals totaled more than \$800B, up 38% YoY and delivering the strongest year-to-date period since 2000, according to Thomson Reuters.

## MOVERS & SHAKERS

### HELIX up 29% QTD

Helix Energy Solution is an offshore energy company operating through well intervention, subsea contracting, robotics, and production facilities. Last quarter, Helix shares sold off after guiding 2018 below expectations, underperforming the ROBO index peers. In 1Q, Helix meaningfully outperformed 1Q results due to stronger than expected wells intervention and improved robotics business. Revenues rose 36% YoY and EBITDA increased 39% YoY. The company's wells intervention achieved utilization at 73% across the fleet, while the robotics business is expected to show cost improvements for the remainder of the year. The company also made strong progress on improving its balance sheet. We see a strong path to EBITDA north of \$200M by next year driven by improved outlook in all of their segments of the business.

### ISRA Vision up 26% QTD

ISRA Vision is a leading provider of surface inspection and image processing systems. Due to its high order volume, ISRA is off to a very strong start in 2018. During the quarter, ISRA Vision received a major order from an internationally leading manufacturer for the 3D inspection of smartphone housings. The result: volume order totals of approximately 4M Euros. ISRA's multi-camera system, based on deflectometry, enables reliable and quality inspection of shiny and reflective surfaces with accuracies in the micrometer range. The solar business is just one of the areas in which ISRA has ramped up its sales activities, and the company is anticipating revenue growth of significantly above 10% for the year. With its pipeline continuing to build with several large potential contracts, ISRA feels confident that it can surpass revenue growth beyond 200M Euros.

### Jenoptik AG up 25% YTD.

Jenoptik AG is a market leader in optoelectronics with a broad product portfolio that extends from night vision equipment to manufacturing metrology and precision optics for the semiconductor and healthcare industries. Jenoptik AG got off to a good start this year with strong order intake for its optical system, as well as significant sales expansion. EBIT is very strong in view of the high sales volume with semiconductor equipment and the

gradual invoicing of its growing toll collect project. FY18 company guidance of 10.5-11% EBIT margin and revenues of \$790-810M were reaffirmed. Mobility orders declined by 8% YoY, while orders of defense and civil systems normalized for the time being. Group sales, which were driven by optics and life science, increased strongly by +16% to EUR \$190M. FCF generation was also stronger than expected.

### John Bean Technologies down 22% QTD.

John Bean shares declined sharply after reporting weaker than expected results and lowering operating margin assumptions for the year. Organic sales were down 3% off a tough comp (+17%). Operating results were negatively impacted by inefficiencies in the FoodTech division due to short-term operational and new product launch inefficiencies. Management believes it is making progress to improve the order rates and improve its operational improvements this year. John Bean is also actively seeking to make acquisitions in the fragmented food processing equipment sector.

### National Instruments down 18% QTD.

National Instruments is the leading provider of virtual investments, revolutionizing the traditional test and measurement industry by increasing productivity and lower costs through easy-to-integrate software. After several strong quarters, National Instruments posted weaker than expected results for 1Q and lowered outlook for 2Q. Revenues missed street estimates with semiconductor weakness concentrated in a large number of accounts in the mobile devices supply chain in Taiwan and Korea. Longer term, National Instruments and the test and measurement industry is expected to be one of the biggest beneficiaries from accelerating demand in 5G communications, automotive, defense (U.S.), and IoT enabling chips and devices. We expect this ramp to occur in CY19.

## YEAR-TO-DATE PERFORMANCE

### Total return by subsector, year to date (%)

Total return by sector (%)	Year to date	Past 12m
3D Printing	10	-21
Actuation	0	32
Computing, Processing, & AI	5	15
Consumer Products	-14	-27
Energy	8	12
Food & Agriculture	-5	5
Healthcare	24	32
Integration	-4	11
Logistics Automation	8	27
Manufacturing & Industrial Automation	-7	21
Security	-5	42
Sensing	6	35
<b>TOTAL</b>	<b>3</b>	<b>20</b>

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